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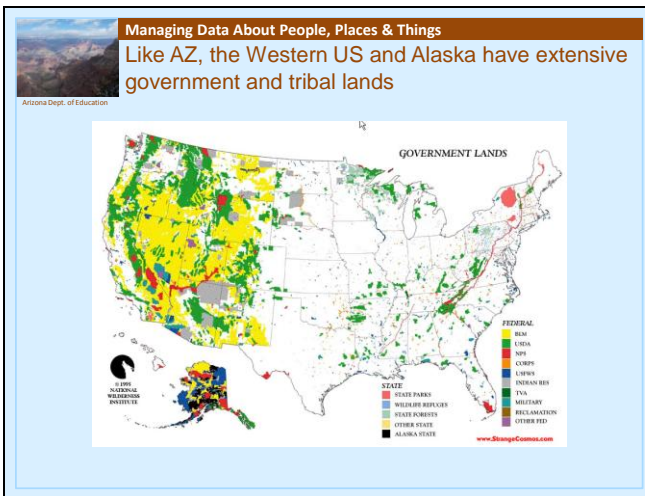


Managing Data About People, Places & Things

The Place


- Arizona is the 6th largest state with the 5th largest city
- Only 15% of the state is privately held
 - Extensive holdings by federal government due to unique ecosystem, geography, archaeological sites, and natural wonders
 - 31 large state parks
 - 5 large military reservations
 - 23 tribal reservations cover 25% of the state

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The People

- The bulk of the public student population is in one place
 - Maricopa county (Phoenix metro) contains 62% of the student population and Pima (Tucson) has 14%
 - The other 24% is widely dispersed in 13 other counties across 96,000 square miles
- The bulk of the tribal students are in the Navajo Nation in northern Arizona

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The Things

- Over 1500 public schools in 224 districts
- 11% of US charter schools
- 55 BIE and BIE-controlled contract or grant schools (US # 1)
- 23 tribal reservations overlaid by over 40 public school districts
- Some Indian and military reservations have “public” charter schools & day care

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Changing Relationships

- The existing operational entity structures were based on ADM funding (school belongs to district, district belongs in county)
- New relationships were tacked on in the operational system (school may not belong to district, district may cross counties)
- Non-school entities were needed for food service, community and early childhood programs
- “Who can see what” data security drove faux entities and roll ups

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AEDW Discoveries

- AEDW development initially used operational view of school and district relationships
- Most student data is associated with the traditional school-district structure
- Non-ADM funding turned out to drive most of the non-traditional things, places, and relationships:
 - Non-traditional school funding uses aggregated student data instead of the normal level of enrollment detail
 - Grant funding frequently requires different roll-ups
 - Grant fund distribution goes to many non-K-12 school places
 - Food service program support and funds involve the most non-traditional entities

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Funding Sources Beyond ADM

- State trust land revenue
- % of Indian gaming revenue
- Grazing rights & forest reserve income
- Federal grants paid directly to districts & charters
 - Impact Aid
 - Indian Education-LEA
- Private tuition & other income at public schools
- Tax return & direct donations
- State earmarks paid directly to districts & charters

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Non-traditional Things & Places

ADE has many more non-traditional than traditional K-12 things and places:

- State universities
- Community colleges
- Child and adult nutrition program locations
- Behavioral health facilities
- State adult and juvenile corrections facilities
- County juvenile detentions and jails
- County probation (adult and juvenile)

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Non-traditional Things & Places
(cont'd)

- Bureau of Indian Education schools or dorms, some are intertwined public and BIE schools
- Tribes and reservations
- Public school districts overlaid on Indian & military reservations
- Charter school on a military reservation
- Beauty schools, power plants, other career education and experiential learning facilities
- Community groups, including boys & girls clubs and libraries

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Non-traditional Things & Places
(cont'd)

- Head Starts and preschools, including co-located private/public preschools
- Parents in remote areas
- Private and parochial schools
- Adult and family literacy programs
- Pre-natal education through early childhood programs
- Adult workforce improvement & GED programs

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Things Change

- Entity attributes vary by role
- Entities may have multiple roles

Entity	Roles	Attributes
 Entity Name President of the United States	Chief of State	Executive orders signed Number of appointees Number of nominations
	Chief Executive	
	Chief Diplomat	
	Commander-in-Chief	Party affiliation Date joined Positions held
	Chief Legislator	
	Chief of Political Party	
	Chief Guardian of the Economy	

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Multiple Role Example

“Arizona Schools for the Deaf and Blind” contains:

- Separately funded state agency
- Education group overseen by ADE
- Statewide on-site SPED school support
- Statewide SPED student outreach, off-site and in-home
- Boarding school and campus (K-12)
- Dormitory (B-K, adults)
- Day school (K-12)
- Preschool
- Early childhood service provider
- Pre/post-natal education provider
- Community performing arts facility
- Charitable foundation

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Our New View

- Entity hierarchies are based on a role
 - Legal ownership (policies and guidance)
 - Statutory oversight (review)
 - Services provided (nutrition, education)
 - Funding (initiated or distributed)
 - Data (creator, reviewer, consumer)

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Federal Directions

We are working with two national data initiatives:

- Common Data Standards Initiative for:
 - Standard data element definitions and code sets for each
 - Use cases
- NCES National Education Data Model for:
 - Taxonomy
 - Entities & attributes not currently covered by the CDS initiative

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CDS & NEDM Comparison Example	
CDS Variables	NEDM Entities
School	School
LEA	District
K12 Course	Course
K12 Assessment	testAssessment
Academic Record	studentAcademicRecord
K12 Student	Student
K12 Staff	staffMember
Postsecondary Transition	

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- | Managing Data About People, Places & Things | |
|---|--|
| National Data Model Adoption | |
| <ul style="list-style-type: none">• NEDM is conceptual model that requires a physical relational database design• States must analyze their entity context relative to the national model's entities• Requires state research into master data (places and things) relationships and attributes before adoption• Attributes of entities may change depending on the constituency served (public/private) | |


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- | Managing Data About People, Places & Things | |
|---|--|
| State Context | |
| <p>State context requires relationship definitions in order to access detail data or provide reporting for more difficult relationships, like these:</p> <ul style="list-style-type: none">• County level dual ownership or oversight of things• Tribes, reservations, BIE and public schools (or both)• Business, individual, or government ownership of a charter• Partnerships and consortiums with multiple relationships• An entity can have one or more parent entity or joint ownership, with different ownership and oversight for each• Level of ownership varies by role | |

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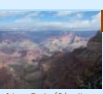
Embedded and Conflicted

States must also make sense of unique embedded and conflicting relationships between entities:

- School units inside another entity: county jail, county juvenile detention, state adult corrections.
- Transient ownership: bus stops are summer lunch program delivery locations that may be sponsored by different districts each year
- Public-private preschools: status changes based on the students attending the preschool
- Public-private service entities: child nutrition services (public) provided at a church school (private) and AIMS testing (public) at the same church school (private)

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AEDW Implementation Process

- Categorize each box on the AEDW Master Data Model as an entity and list its roles
 - **Entity** is a **thing**
 - **Role** is a **purpose** that **thing** serves
- Map legacy entities to AEDW MDM entities and roles
- Map NEDM entities to AEDW MDM entities and roles
- Identify and resolve inconsistencies

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AEDW Implementation Process (cont'd)

- Map legacy attributes to new AEDW MDM entities and roles
- Assign NEDM attributes to appropriate AEDW MDM entities and roles
- Identify and resolve inconsistencies
- Create associative entities
- Assign attributes to associative entities

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Implementation Challenges

So far, challenges have been a matter of timing:

- How to deal with model entities not yet available in NEDM
- How to deal with model entities available in NEDM for which attributes have not yet been defined
- How to use existing NEDM entities to create associative entities
- Being ahead of the adoption curve of the model, resulting in lack of opportunity to collaborate with other states

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Questions?

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THANK YOU!

Comments?
Donald.Houde@azed.gov
602 364-1368

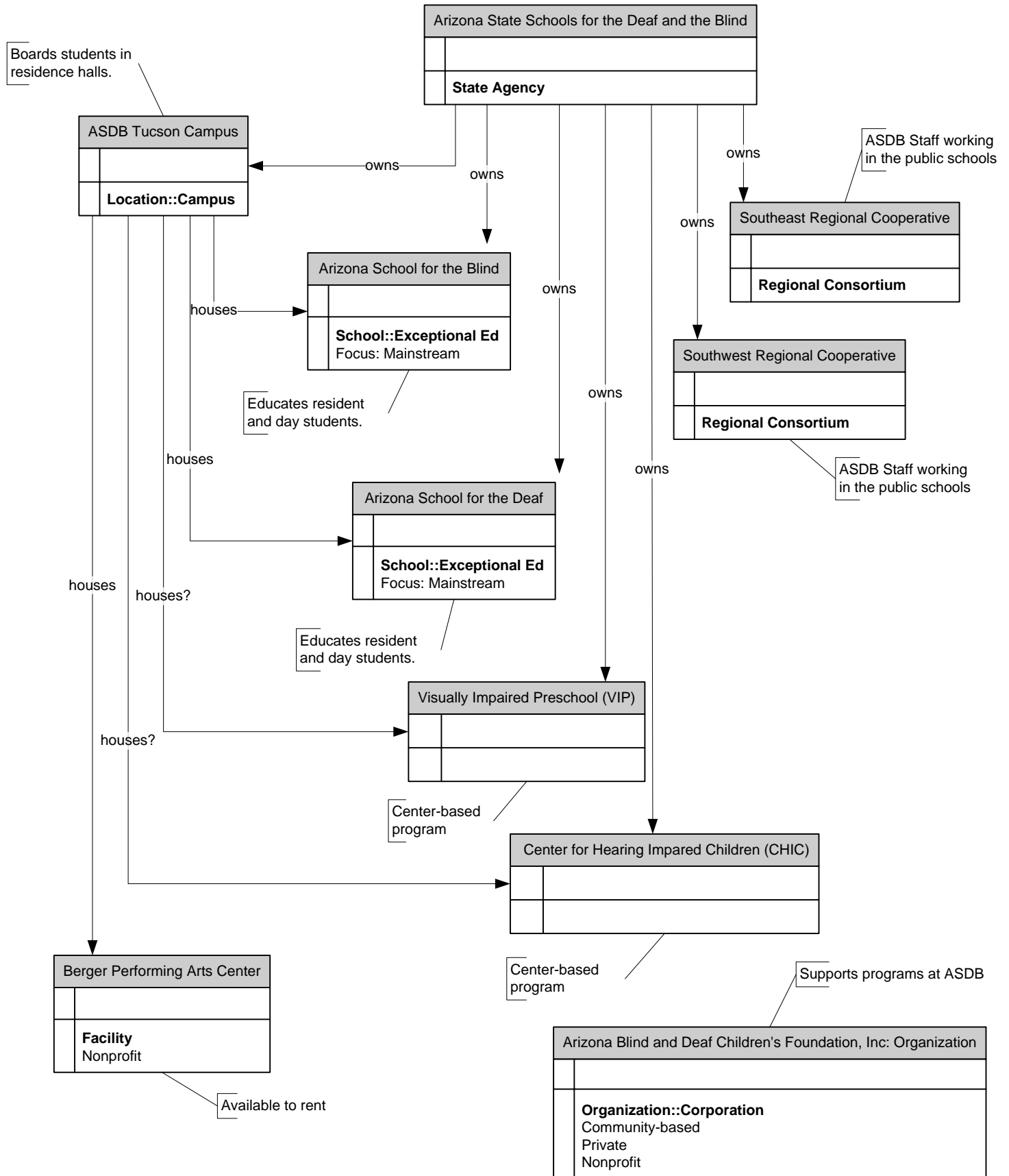
Multiple Role Example:

Arizona Schools for the Deaf and Blind

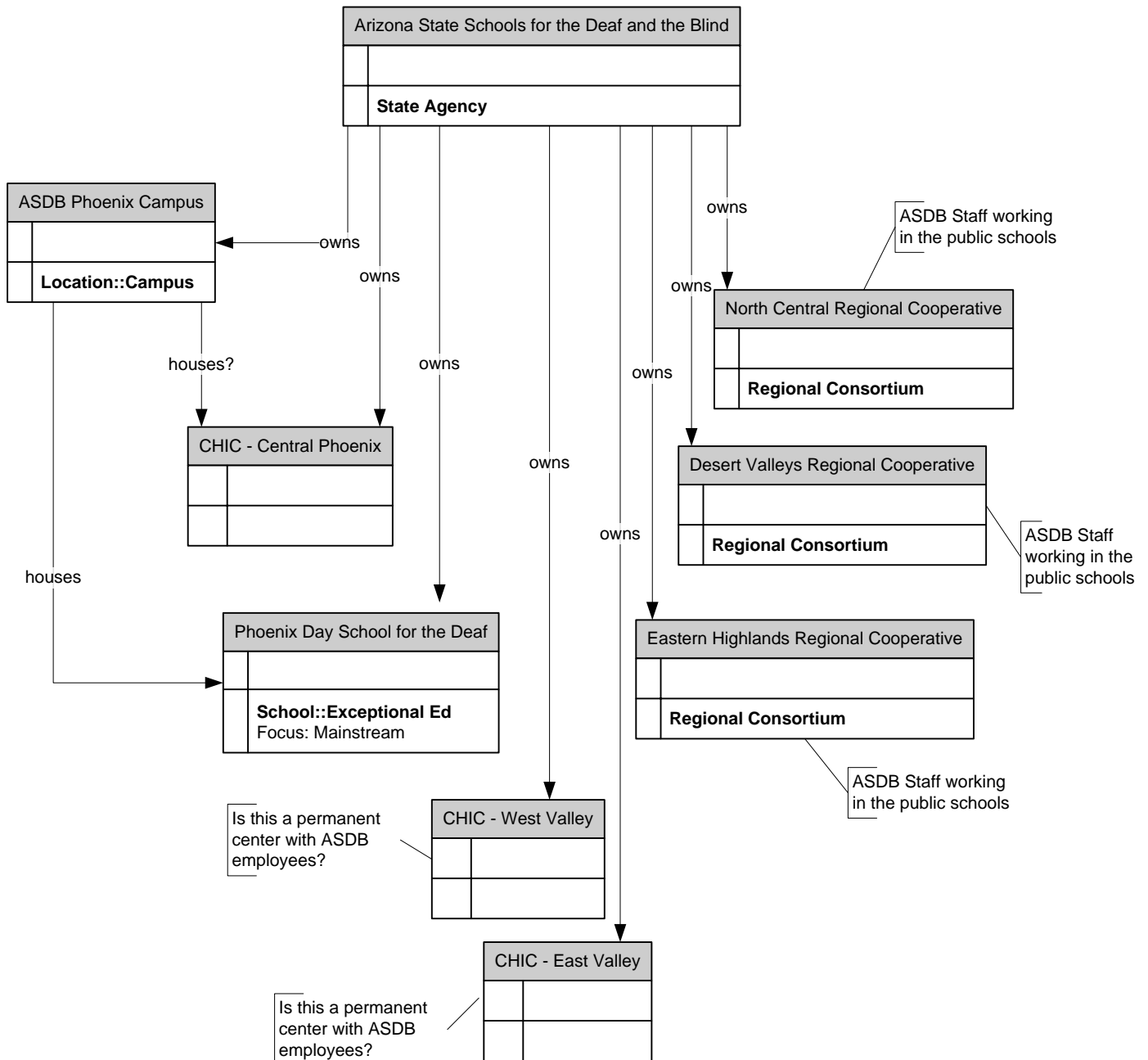
AEDW Entity Models

(Work in Progress)

ASDB Direct Educational Services – Tucson



ASDB Direct Educational Services – Phoenix



North Central Regional Cooperative

North Central Regional Cooperative	
	Regional Consortium

Member Districts

Aquila ESD
 Ash Fork USD
 Bagdad USD
 Beaver Creek ESD
 Bullhead City Elementary ESD
 Canon School ESD
 Clarkdale-Jerome ESD
 Colorado City USD
 Colorado River Union HSD
 Cottonwood-Oak Creek USD
 Crown King ESD
 Flagstaff USD
 Hillside Elementary ESD
 Fredonia & Moccasin USD
 Grand Canyon USD
 Hackberry Elementary ESD
 Humboldt USD
 Kayenta USD
 Kingman USD
 Kirkland ESD
 Littlefield ESD
 Mayer USD
 Maine Consolidated
 Mingus Union High School
 Mohave Valley Elementary ESD
 Owens-Whitney ESD
 Page USD
 Payson USD
 Peach Springs Elementary ESD
 Pine Elementary ESD
 Prescott USD
 Sedona-Oak Join USD
 Seligman USD
 Skull Valley ESD
 Topock ESD
 Tuba City USD
 Valentine ESD
 Williams USD
 Winslow USD
 Yarnell ESD
 Yucca Elementary ESD

Charter Schools Served

Accelerated Learning
 Center for Creative Education
 EAGLE Academy
 Excel Education Centers
 Flagstaff Arts and Leadership Academy
 Flagstaff Junior Academy
 Franklin Phonetic
 Kingman Academy of Learning
 Lake Powell Academy
 Mingus Springs Charter
 Mountain Oak Charter School
 Parkview MS Charter
 Pine Forest School
 The Shelby School
 Shonto Preparatory Academy
 Skyview Charter
 Success School of Prescott Valley

Counties Served

Mohave
 Coconino
 Yavapai

BIE Schools Served

Grey Hills Academy – High School
 Little Singer Community School
 Tonalea School
 Tuba City Boarding School

Eastern Highlands Regional Cooperative

Eastern Highlands Regional Cooperative	
	Regional Consortium

Member Districts

Blue Ridge USD
 Cedar USD
 Concho ESD
 Ganado USD
 Heber/Overgard USD
 Joseph City USD
 Red Mesa USD
 Round Valley USD
 Sanders USD
 Show Low USD
 Snowflake USD
 St. Johns USD
 Window Rock USD

Charter Schools Served

Rainbow Accommodation School

BIE Schools Served

Dilcon Community School
 Hopi Day School
 Hopi Jr/Sr High School
 Hotevilla Bacavi community School
 Jeehdeez'a Academy
 Keams Canyon boarding School
 Polacca Day School
 Rock Point Community School

Early Childhood Programs

Vision Outreach
 Hearing Outreach
 Visually Impaired Preschool Services
 Hearing Impaired Preschool Services

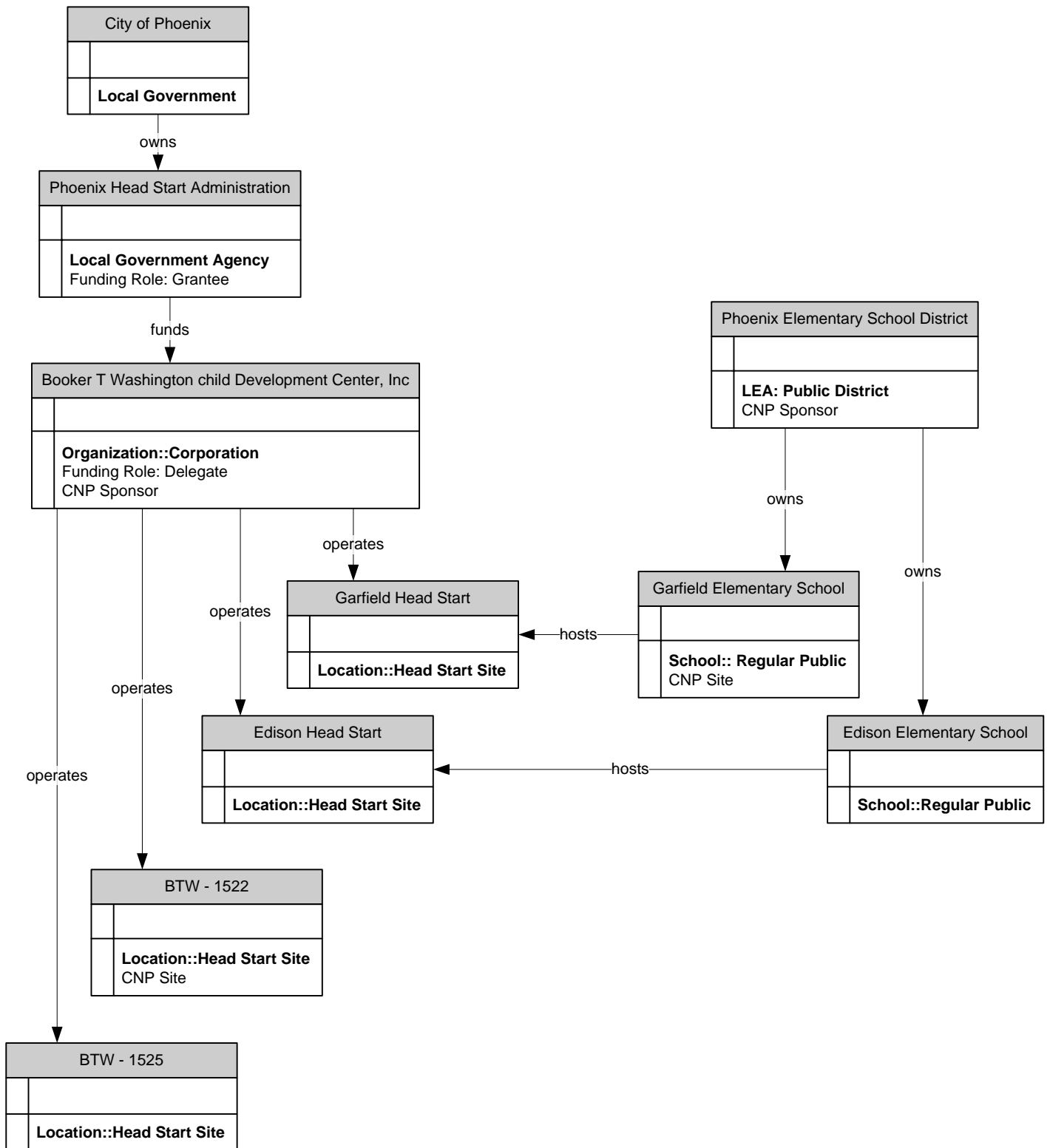
Entity Hierarchy Example:

Head Starts

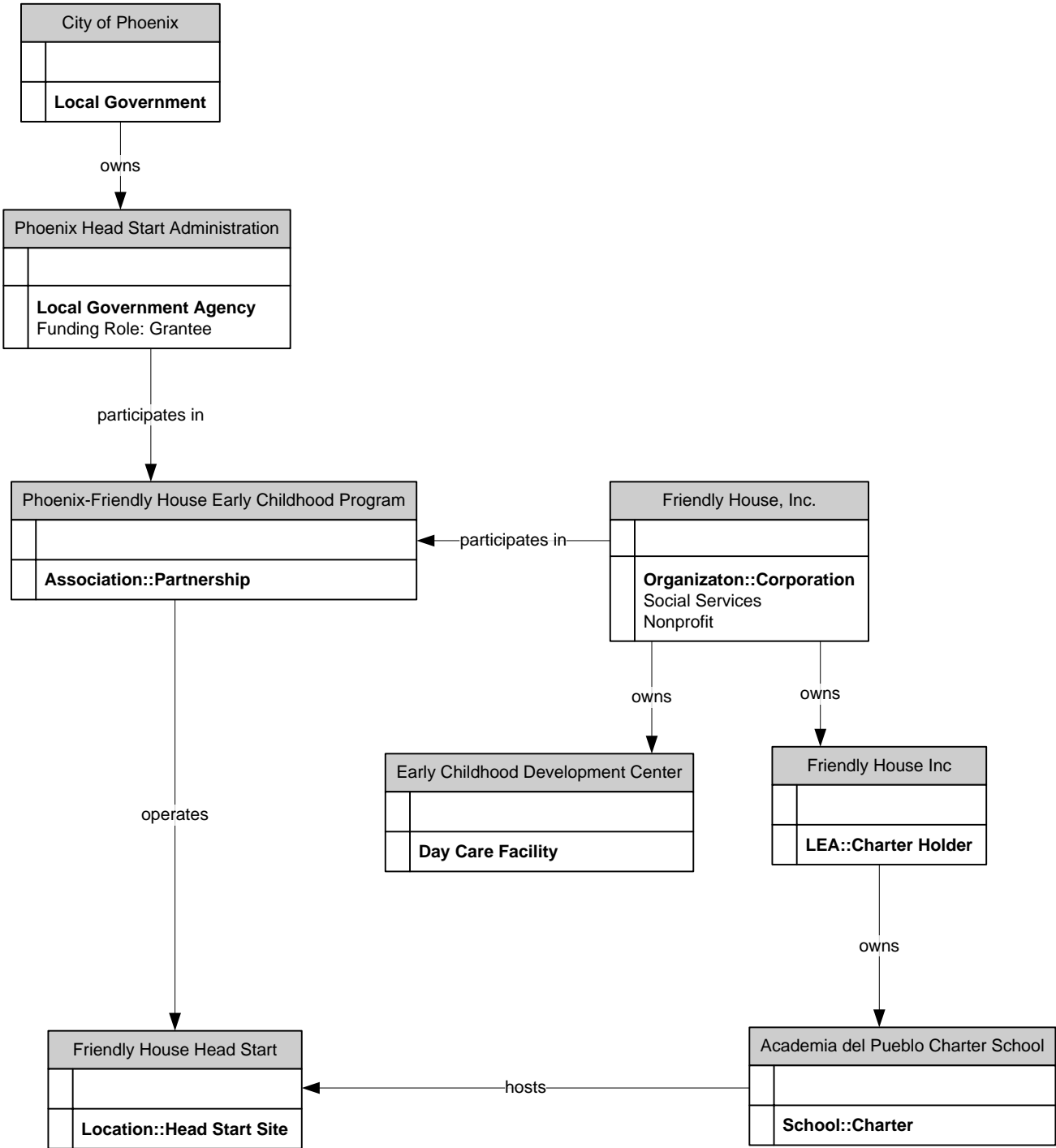
AEDW Entity Models

(Work in Progress)

Booker T Washington Head Start Program



Friendly House Head Start Program



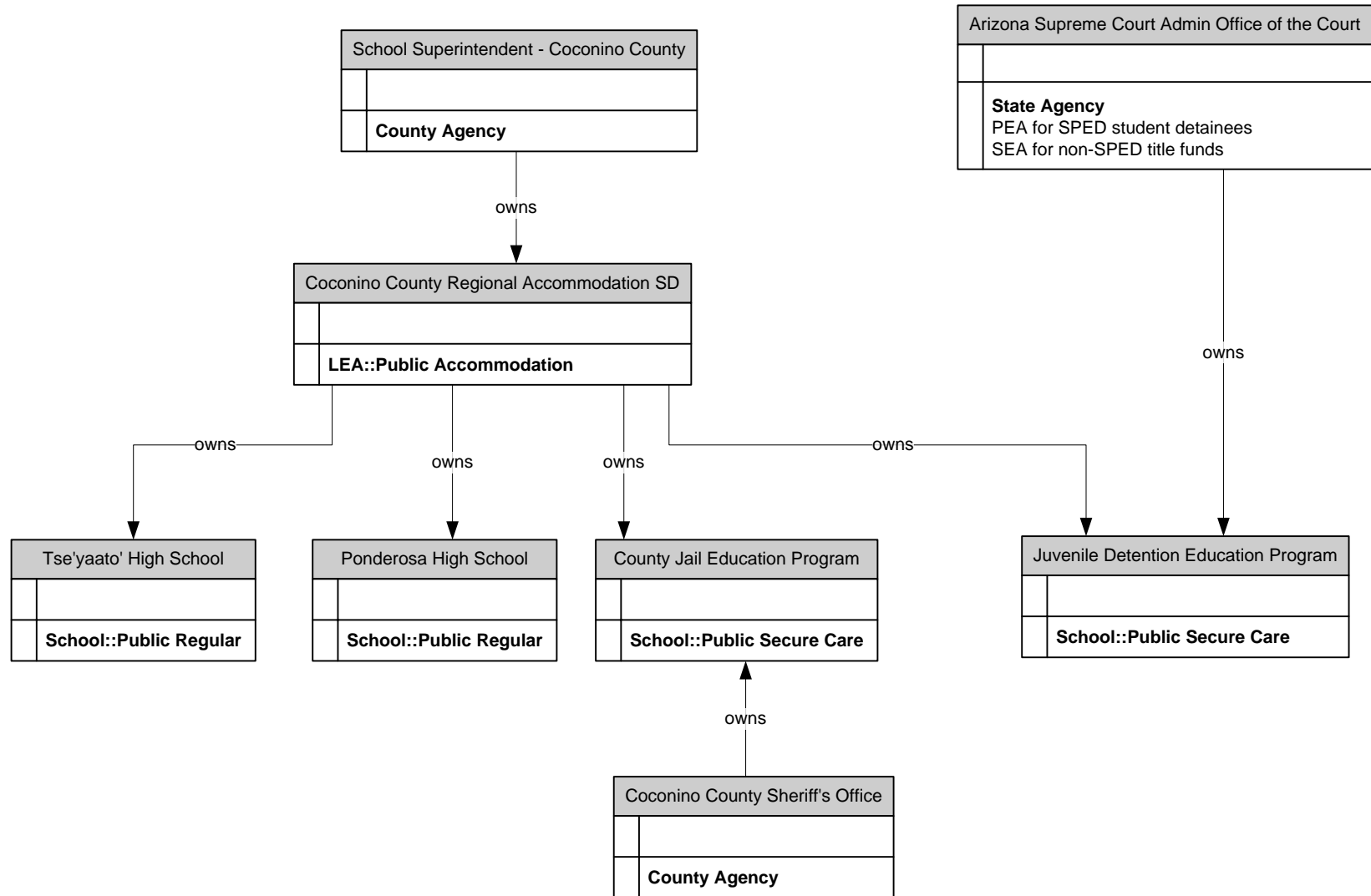
Entity Hierarchy Example:

Coconino County

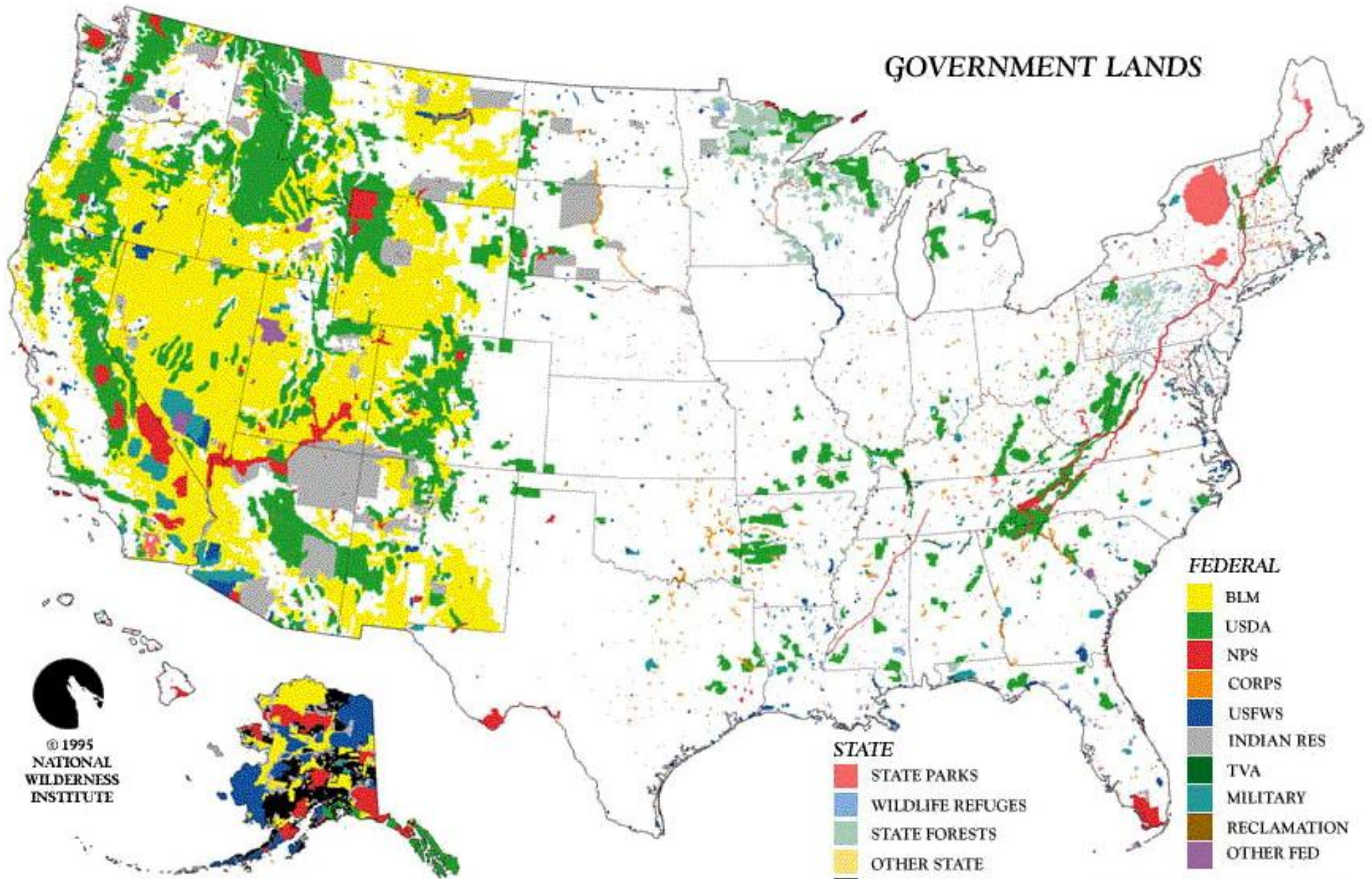
AEDW Entity Models

(Work in Progress)

Coconino County Education



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